ALASKA SAR PROCESSOR UPGRADE FOR RADARSAT

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The Alaska SAR Processor (ASP) is a subsystem in the Alaska SAR Facility (ASF) which has been in operations at the University of Alaska, Fairbanks (UAF) since 1991. It is being used routinely to process SAR data in support of the ERS- 1 and JERS- 1 missions. To anticipate the upcoming ERS-2 (late 1994) and RADARSAT (early 1995) satellites, the ASP is currently being upgraded to accommodate SAR data from these two sensors as well. In addition to adding system capability to read RADARSAT data format, the ASP throughput is being enhanced to meet the revised processing requirements of 58 minutes of data per day from ERS- 1, ERS-2, JERS - 1, and RADARSAT. Other areas of system enhancements include the need to satisfy new maintenability and operability standards and to conform to newly adopted ASF system interface protocol, This upgrade effort is to be accomplished around the existing custom digital correlator hardware, and is further constrained to retain the current processing capabilities for ERS-1 and JEW-1.

There are three major areas in the ASP that require new hardware additions and/or upgrades. First is the addition of a front-end interface on the ASP to accept RADARSAT data. Second is the replacement of the output image device from tape to disk. This change shall improve the system throughput capability but requires the development of a new SCSI output interface, "1'bird is the replacement of the existing control computer MASSCOMP which is no longer being manufactured. By switching to a new higher performance UNIX workstation, the long-term system reliability issue can be satisfactorily addressed while achieving further improvement in throughput. In addition, the new workstation shall allow the ASP to operate as a server in the newly adopted ASF client-server environment and be compatible with all the new inter-process communication and interface protocol,

The upgraded ASP is expected to be able to generate an 8K X 8K pixel image frame in three minutes. The target on-line date at UAF is January 1995, in time to support ERS-2 and RADARSAT commissioning activities at UAF.